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A REVISION OF THE NEW NEOTROPICAL LEAFHOPPER SUBFAMILY
PHEREURHININAE (HOMOPTERA: CICADELLIDAE)

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ABSTRACT—A new subfamily, **Phereurhininae**, of leafhoppers from the American tropics is described and discussed. Three genera are included: *Phereurhinus* Jacobi, *Clydacha* Melichar, and **Dayoungia** Kramer, new genus. In the genus *Phereurhinus*, two new species are described from Peru, *P. hoplon* and *P. sosanion*, and one new species from Brazil, *P. enteon*. In the genus *Clydacha*, three new species are described from Peru, *C. ballista*, *C. condylura*, and *C. catapulta*. In the genus *Dayoungia*, one new species is described from Argentina, *D. magister*, and two new species are described from Brazil, *D. virescens* and *D. metron*.

The Neotropical genera discussed in this paper appear to form a natural group, but their assignment to any existing subfamily of leafhoppers is questionable. Their affinities seem to be closest to the Cicadellinae, but Young (1968) deliberately excluded them from his massive report on the Proconiini. Young (personal communication) is not including these genera in his future papers on the Cicadellini, the only other tribe he is recognizing in the Cicadellinae. Hence, I am establishing a new subfamily for their reception.

Phereurhininae Kramer, new subfamily

Type-genus *Phereurhinus* Jacobi

Head produced with median length greater, usually more than 2½ times greater, than length next to eyes; distal midline of crown often elevated as carina; ocelli on crown; frontal sutures reaching coronal surface and usually touching ocelli; pronotum large with lateral margins long, carinate, and flared; scutellum large; appendix of forewing minute or absent; surfaces of crown, pronotum, and scutellum variously punctate, striate and/or rugulose; face tumid and without median longitudinal carina on clypeus; posterior legs at rest not attaining posterior proepimeral margins; apex of hind femur with pair of slender

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setae; male plates and pygofer with randomly arranged hairlike setae. Females unknown.

The subfamily Phereurhininae is closest to the Cicadellinae on the basis of the frontal sutures reaching or nearly reaching the coronally positioned ocelli and the tumid face. The best character for separating the two subfamilies is the flared, and at times almost foliaceous, lateral margins of the pronotum. This character is present in the Phereurhininae and absent in the Cicadellinae.

KEY TO GENERA OF PHEREURHININAE

1. Head greatly prolonged and distally spatulate (fig. 4) *Clydacha* Melichar
- Head triangular 2
2. Distal midline of crown elevated as carina (fig. 1); antennal ledges triangularly produced; face with vestiture *Phereurhinus* Jacobi
- Distal midline of crown not elevated (fig. 43, 47); antennal ledges not triangularly produced; face without vestiture *Dayoungia* Kramer, n.g.

Clydacha Melichar

Clydacha Melichar 1926:345. (without species)

Phereurhinus cochlear Jacobi, type-species by China 1938:184.

Large (12–13.8 mm), elongated, parallel-sided, flattened leafhoppers; head greatly prolonged apically and thickly spatulate; midline of crown elevated and carinate before ocelli to near extreme apex; lateral edges of head sharp and carinate; portion of margins near eyes often flared and slightly elevated above level of eye; portion of crown on each side of coronal suture in approximately basal $\frac{1}{3}$, tumid and rugulose; antennal ledges protruding, triangular and carinate; face with variable covering of scattered hairlike setae; surface of pronotum punctate rugulose, often with traces of median longitudinal carina, hind margin of pronotum indented; surface of scutellum finely scaly to rugulose, rarely with slight trace of median longitudinal carina; forewing elongate and lacking distinct appendix, with 4 apical and 3 closed preapical cells, all veins well delineated; legs slender, with spinelike setae on hind tibiae mainly short and fine. *Male genitalia*: Pygofer without appendages or processes; valve narrow; plates and styles elongate, slender, and variously modified; connective short and II-shaped; aedeagus heavily membranous, especially apically, with sclerotized dorsocentral rod bearing appendages; aedeagus dorsally connected to pygofer and base of anal tube by sclerotized apodeme; gonopore not clearly delimited. *Female genitalia*: Female unknown.

KEY TO SPECIES OF CLYDACIA MELICHAR

1. Aedeagus in ventral view with 3 pairs of processes arising in distal $\frac{1}{4}$ (fig. 5); apex of style consisting of 2 overlapping, rounded lobes (fig. 7, 8) *cochlear* (Jacobi)
- Aedeagus in ventral view with no more than 2 pairs of processes arising in distal $\frac{1}{4}$; apex of style hooked 2

- 2. Aedeagus in ventral view with pair of long, straight processes originating near middle of shaft and extending beyond lateral margins in distal $\frac{1}{3}$ (fig. 10); apex of style in dorsal view weakly hooked, with angular projection on preapical outer margin (fig. 11) *ballista*, new species
- Aedeagus in ventral view not as above; apex of style in dorsal view weakly or strongly hooked, with preapical lobelike expansion 3
- 3. Aedeagus in ventral view with pair of contiguous, slender processes on midline in distal $\frac{1}{3}$ (fig. 15); hook at apex of style slender in lateral view (fig. 17) *condylura*, new species
- Aedeagus in ventral view without processes on midline in distal $\frac{1}{3}$ (fig. 22); hook at apex of style stout in lateral view (fig. 24).....
..... *catapulta*, new species

Clydacha cochlear (Jacobi)

fig. 5-8

Phereurhinus cochlear Jacobi 1905:169.

Clydacha cochlear (Jacobi); China 1938:184.

Length of male: 12.5 mm. *Structure:* Cephalic extension at apex gradually expanded and rounded distally; surface of crown weakly and irregularly rugulose; surface of pronotum uneven in anterior $\frac{1}{2}$ with poorly defined callosities, posterior $\frac{1}{2}$ weakly reticulately rugulose, suggestion of longitudinal carina on midline; lateral edges of pronotum declivent; lower portion of face, except middle portions of clypellus and clypeus, thinly covered with pale, moderately short hairlike setae; traces of similar covering on thoracic venter. *Coloration:* Ground color of crown, pronotum, and scutellum brownish yellow; most of crown, including central carina, lightly infuscated; pronotum lightly infuscated on outer $\frac{1}{3}$ in anterior $\frac{1}{2}$; scutellum with anterior angles darkened; forewing hyaline with veins brownish yellow and large brownish yellow, transparent patch at middle; patch fading in claval area; face and thoracic venter with same ground color as crown, lightly infuscated except for intervals between clypeal arcs, portions of genae, sides of pronotum below carina, and irregular portions of thoracic sclerites; legs with all femora fuscus except at apices, anterior tibiae largely fuscus, mid- and hind tibiae darkened at bases and apices, 1st tarsal segment of all legs darkened apically, rest of tarsal segments largely fuscus. *Male genitalia:* Aedeagus in ventral view (fig. 5) with lateral margins indented and 3 pairs of processes in distal $\frac{1}{4}$ as apical branches of dorsocentral rod; sclerotized apodeme attached to base of dorsocentral rod, its shape like that shown in fig. 14; valve and plates like those shown in fig. 21; style in dorsal view (fig. 7) elongate, sides slightly wrinkled preapically, apex consisting of 2 overlapping lobes; apex of style in lateral view (fig. 8) concave before apex on dorsal margin.

Type: A ♂ lectotype is here selected with the labels "Peru N Rioja, Garlepp c." (light green label) and "Coll. A. Jacobi, 1913-9" (dark green label—this label added later) and "A. Jacobi, Typus" (pink label with black frame) and "Staatl. Museum für Tierkunde, Dresden". The lectotype is in the entomological collections of the Museum für Tierkunde, Dresden, D. D. R.

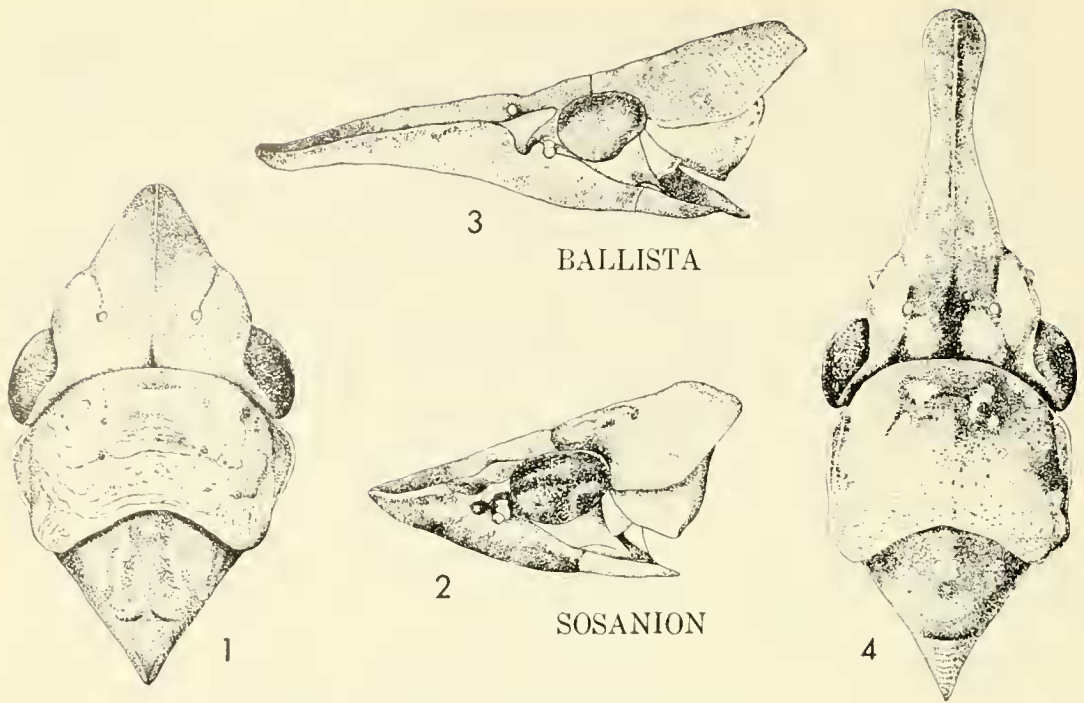


Fig. 1-2. *Phereurhinus sosanion*. 1, head and thorax in dorsal view. 2, same in lateral view. Fig. 3-4. *Clydacha ballista*. 3, head and thorax in lateral view. 4, same in dorsal view.

Notes: The characters noted in the key distinguish *C. cochlear* from its congeners. The lectotype male is the only specimen known to me.

Clydacha ballista Kramer, new species

fig. 3-4, 9-14

Length of male: 12-12.5 mm. *Structure:* Like that of *C. cochlear* except as follows: rugulose surfaces of crown and pronotum more clearly defined; surface of scutellum rugulose, anterior angles finely granular, sometimes with vague carina on midline. *Coloration:* Variable, ground color of crown and pronotum ochreous and only darkened at extreme coronal apex and on coronal carina to entirely black except for 2 pale spots behind ocelli which touch posterior margin of head; scutellum with same ground color and only darkened at anterior angles to entirely black; forewing varying from that of *C. cochlear* to heavily infuscated or blackened at base and middle with veins darkly fuscous to black; ground color of face and thoracic venter stramineous with clypellus, central portion of clypeus, clypeal arcs, and extreme facial apex fuscous to black; thoracic sclerites with anepisternum 2 broadly banded with black and katepisternum 2 black except at margins, pattern similar to that of *C. cochlear*; legs with femora fuscous except basally and apically, 1st and 3rd tibiae darkened distally, 2nd tibiae uniformly lightly embrowned, tarsi like those of *C. cochlear*. *Male genitalia:* Aedeagus in ventral view (fig. 10) with lobelike expansion of lateral margins in basal $\frac{1}{2}$, central rod forked at middle, each fork branched apically (fig. 12) or not and

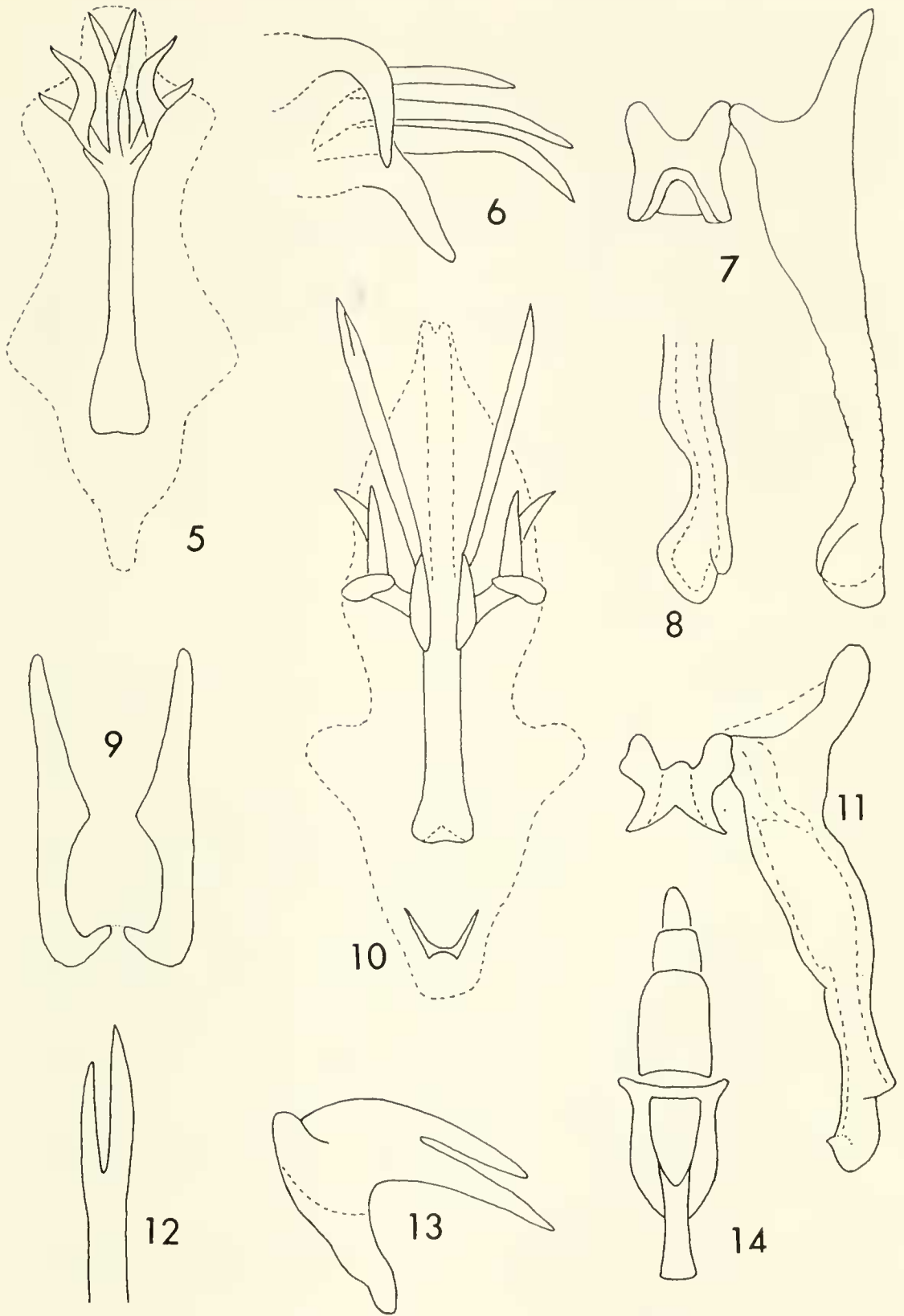


Fig. 5-8. *Clydacha cochlear*. 5, aedeagus in ventral view. 6, distal processes of aedeagus in lateral view. 7, connective and style in dorsal view. 8, apical portion of style in lateral view. Fig. 9-14. *Clydacha ballista*. 9, plates in ventral view. 10, aedeagus in ventral view. 11, connective and style in dorsal view. 12, forked apex of longest aedeagal process in broad view. 13, shorter aedeagal processes in lateral view. 14, sclerotized apodeme and anal tube in posterior view.

extending beyond lateral margins in distal $\frac{1}{3}$, apically acute processes arising laterally near distal portion of rod, in lateral view processes form single structure (fig. 13); sclerotized apodeme in posterior view (fig. 14) basally stalked; plates elongate and slender, gradually produced on inner margins from bases and apices (fig. 9); style in dorsal view (fig. 11) elongate, weakly hooked apically with angular projection on preapical outer margin.

Types: Holotype δ , Monson Valley, Tingo Maria, Peru, 10 November 1954, E. I. Schlinger and E. S. Ross in collection of California Academy of Sciences. Paratypes, $\delta \delta$; 9 with same data as holotype; rest with same data except collection dates—36, 29 November 1954; 2, 2 December 1954; 65, 9 December 1954; 16, 23 December 1954. Total 129 specimens.

Notes: The long pair of processes originating near the middle of the aedeagus at once distinguish this species. The coloration varies considerably and all sorts of intermediates exist between the extremes noted in the description.

Clydacha condylura Kramer, new species

fig. 15-19

Length of male: 13.5 mm. *Structure*: Like that of *C. cochlear* except as follows: spatulate portion of crown with rugulae transverse, surface of apical portion on each side of carina finely granular, surface of crown between ocelli and on each side of carinal base punctate rugulose, surface of crown between basal tumid areas longitudinally rugulose with rugulae converging basally; posterior $\frac{2}{3}$ of pronotum punctate-rugulose; scutellum like that of *C. ballista*. *Coloration*: Crown black except for ochreous portions as follows: round spots on each side of midline at base, areas laterad of frontal sutures to lateral margins, edges of spatulate portion in proximal $\frac{3}{5}$; central $\frac{1}{2}$ of pronotum infuscated or blackened, lateral portions brownish orange; scutellum fuscus or black; forewing brownish orange hyaline in basal $\frac{1}{3}$, fuscus hyaline in middle $\frac{1}{3}$, and hyaline in distal $\frac{1}{3}$; veins similarly colored, but veins in distal $\frac{1}{3}$ brownish yellow; face and thoracic venter marked like those of *C. ballista*; legs marked like those of *C. cochlear*. *Male genitalia*: Aedeagus in ventral view (fig. 15) broadest in basal $\frac{1}{3}$, rod elaborated distally, with 2 pairs of processes in distal $\frac{1}{4}$, central pair narrower and on midline; apex of aedeagus in lateral view (fig. 19) with lateral processes decurved and mesal processes upturned; sclerotized apodeme, valve, and plates similar to those of *C. ballista*; shank of style slender and wrinkled, with preapical lobe and apical hook (fig. 16-18).

Type: Holotype δ , Monson Valley, Tingo Maria, Peru, 29 November 1954, E. I. Schlinger and E. S. Ross in collection of California Academy of Sciences.

Notes: The slender pair of processes on the midline of the aedeagus distinguishes this species. The tricolored forewings and larger size also appear distinctive.

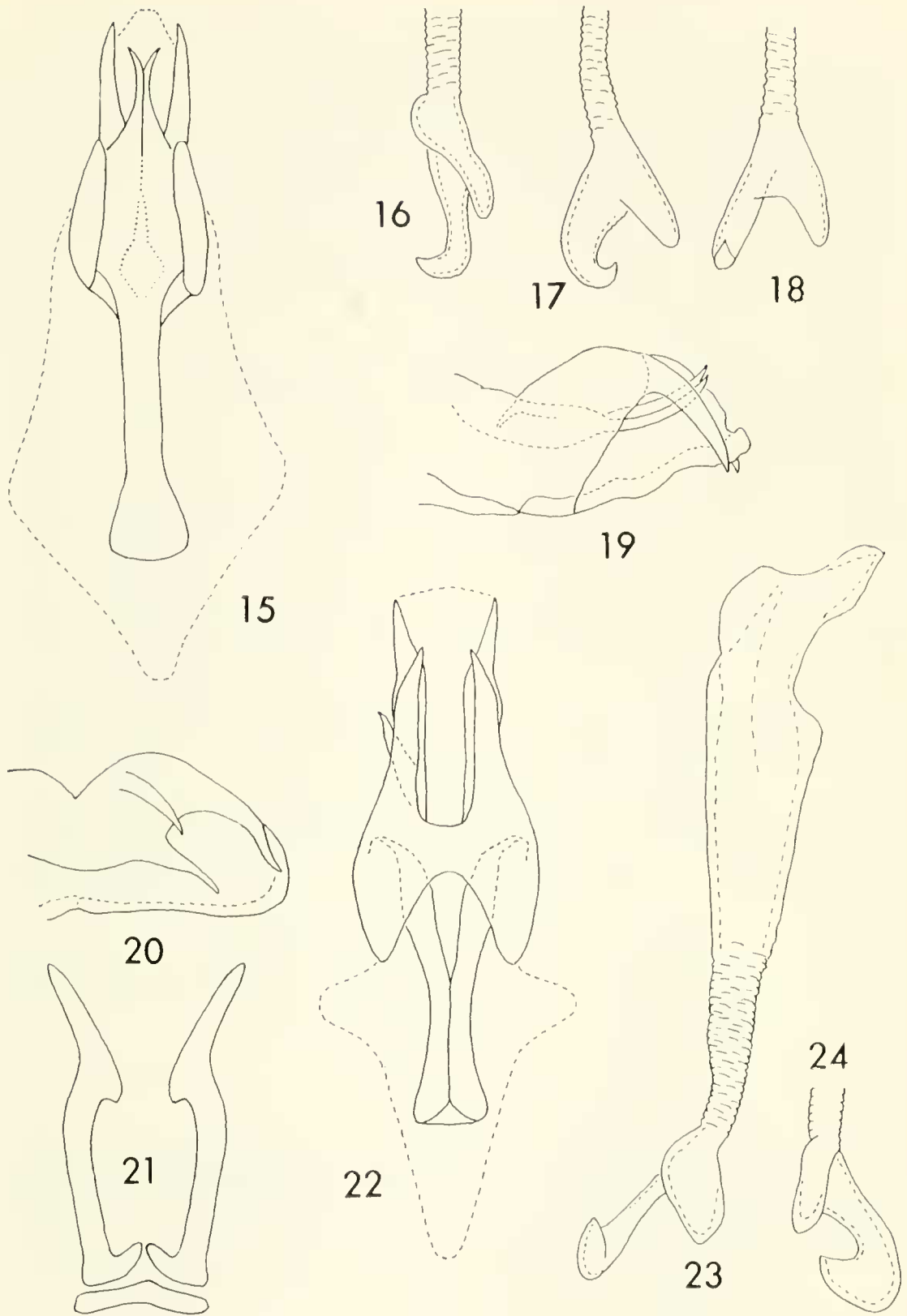


Fig. 15-19. *Clydacha condylura*. 15, aedeagus in ventral view. 16, apex of style in dorsolateral view. 17, same in lateral view. 18, same in broad ventral view. 19, apical portion of aedeagus in lateral view. Fig. 20-24. *Clydacha catapulta*. 20, apical portion of aedeagus in lateral view. 21, valve and plates in ventral view. 22, aedeagus in ventral view. 23, style in dorsal view. 24, apex of style in lateral view.

Clydacha catapulta Kramer, new species

fig. 20-24

Length of male: 12.5-13.8 mm. *Structure:* Like that of *C. cochlear* except as follows: spatulate portion of crown stouter and usually longer; surface of crown with rugulae more distinct; posterior portion of pronotal surface sharply punctate-rugulose; scutellum like that of *C. ballista*, but always with vague carina on midline; hairlike setae covering all of face and more abundant on thoracic venter than in congeners. *Coloration:* Most of crown fuscus to black with lateral margins variably ochreous and pair of light spots on posterior margin like those found in darker specimens of *C. ballista*; ground color of pronotum ochreous, dark brownish orange, or almost fuscus with variable blackened areas in anterior $\frac{1}{2}$; scutellum fuscus to black with angles at times paler; forewing hyaline, veins fuscus, dark transparent patch at middle like that of *C. cochlear*, at times with suggestion of similar patch at base; face marked like darker forms of *C. ballista* but antennal ledges, genae below antennae, and lora also black; thoracic sclerites with anepisternum 2 and katepisternum 2 largely black, but irregularly yellow on their tangent margins; legs marked like those of *C. ballista*. *Male genitalia:* Aedeagus in ventral view (fig. 22) more heavily sclerotized than that of congeners, central rod split distally, lateral edges of aedeagus sclerotized in distal $\frac{1}{2}$, 2 pairs of processes arising in distal $\frac{1}{2}$, sometimes extra process present basad of these; apex of aedeagus in lateral view (fig. 20) with all processes decurved; sclerotized apodeme like that of *C. ballista*; valve and plates in ventral view (fig. 21) with valve simple and each plate produced at base on inner margin and distally curved obliquely laterad to form footlike outline; style in dorsal view (fig. 23) with portion before apex wrinkled, large preapical lobe, and distinct apical hook (fig. 24).

Types: Holotype ♂, Monson Valley, Tingo Maria, Peru, 29 November 1954, E. I. Schlinger and E. S. Ross in collection of California Academy of Sciences. Paratypes, ♂♂; 4 with same data as type; 1 with same data except 26 October 1954.

Notes: In addition to the features of the male genitalia mentioned in the key, the stouter spatulate portion of the head and generally darker color will help to distinguish this species.

Phereurhinus Jacobi

Phereurhinus batillus Jacobi 1905:168, type-species.

This genus is only distinct from *Clydacha* Melichar on the basis of head shape. In *Phereurhinus* the heads are triangularly produced and shorter than the spatulate heads found in *Clydacha*. In all other characters the two genera are essentially alike. I consider head shape, when as spectacularly different as it is in the case at hand, sufficient grounds for generic separation.

KEY TO SPECIES OF PHEREURHINUS JACOBI

1. Crown longer at middle, 2 mm or slightly more; style with a distinct tooth on apical hook (fig. 26) *hoplon*, new species

- Crown shorter at middle, 1.8 mm or less; style without a tooth on apical hook 2
- 2. Apex of style reaching distal $\frac{1}{4}$ of plate *enteon*, new species
- Apex of style reaching beyond apex of plate 3
- 3. Plates forming a distinct open oval area between their bases (fig. 34); apical hook of style sharply turned mesad (fig. 35) ... *sosanion*, new species
- Plates not forming an open oval area between their bases (fig. 37); apical hook of style broadly turned mesad (fig. 36) *batillus* Jacobi

Phereurhinus hoplon Kramer, new species

fig. 25–28

Length of male: 11–11.5 mm. *Structure:* Like that of *P. batillus* except as follows: crown well produced with median length clearly exceeding greatest width; forewing with punctures between veins in basal $\frac{1}{4}$ usually poorly defined. *Coloration:* Like that of *P. batillus* except as follows: forewing infuscated and pigmented to or nearly to bases of preapical cells, hyaline beyond; costal vein not darker than other veins. *Male genitalia:* Aedeagus in lateral and ventral views (fig. 27, 28) similar to that of *P. batillus* but apical processes more slender and differently bent, without preapical processes; valve and plates similar to those of *P. batillus*; style in broad ventral view (fig. 26) only about $\frac{1}{2}$ as long as plate, shank wrinkled but comparatively short and stout, apical hook with subapical tooth (fig. 25).

Types: Holotype ♂, Monson Valley, Tingo Maria, Peru, 29 November 1954, E. I. Schlinger and E. S. Ross in collection of California Academy of Sciences. Paratype ♂ with same data.

Notes: The longer head, more extensively darkened forewings, and toothed stylar hooks make *P. hoplon* the most distinctive species in *Phereurhinus*.

Phereurhinus enteon Kramer, new species

fig. 29–31

Length of male: 9.75–10 mm. *Structure:* Like that of *P. batillus* except as follows: crown well produced with median length slightly exceeding greatest width; forewing with punctures between veins in basal $\frac{1}{4}$ like that of *P. hoplon*. *Coloration:* Like that of *P. batillus* except as follows: ground color lighter; slightly more than basal $\frac{1}{4}$ of forewing deep dark red with some additional grayish-yellow pigmentation near claval base. *Male genitalia:* Like that of *P. sosanion* except as follows: apical aedeagal processes in lateral view (fig. 31) crossed to form open oval area between them basally; same processes in ventral view (fig. 30) as shown; style only about $\frac{3}{4}$ as long as plate with apical hook nearly identical (fig. 29).

Types: Holotype ♂, Itaituba, Brazil (USNM 73370). Paratype ♂ with same data.

Notes: The relatively long head, deep dark reddish basal $\frac{1}{4}$ of the forewings, and short style are the distinguishing features of *P. enteon*.

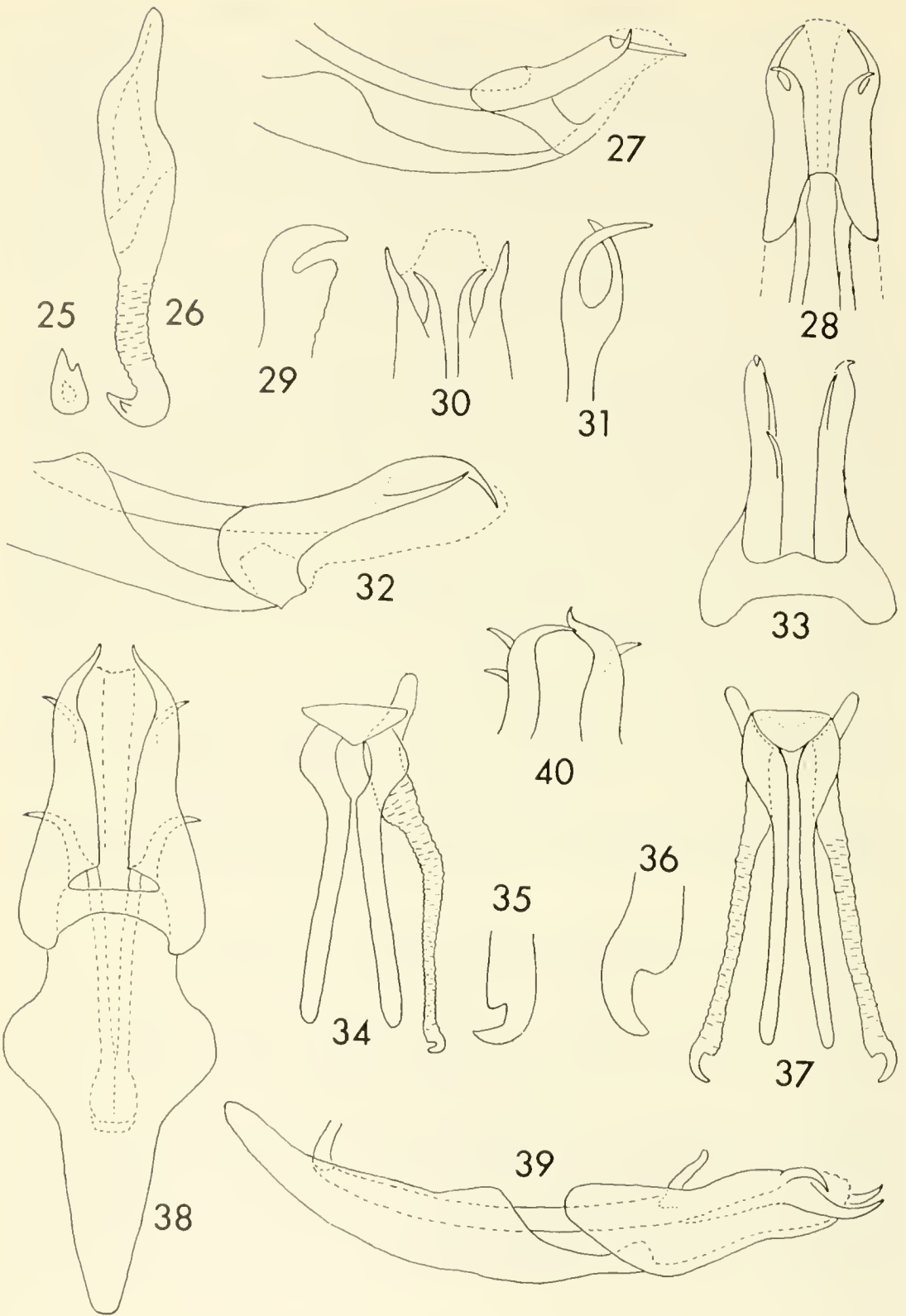


Fig. 25-28. *Phereurhinus hoplon*. 25, apex of style in posterior view. 26, style in dorsal view. 27, distal portion of aedeagus in lateral view. 28, same in ventral view. Fig. 29-31. *Phereurhinus cuteon*. 29, apex of style in ventral view. 30, apex of aedeagus in ventral view. 31, distal aedeagal processes in lateral view. Fig. 32-35. *Phereurhinus sosanion*. 32, distal portion of aedeagus in lateral view.

Phercurhinus sosanion Kramer, new species

fig. 1-2, 32-35

Length of male: 10.5-11 mm. *Structure:* Like that of *P. batillus* except crown well produced with median length slightly less than greatest width. *Coloration:* Like that of *P. batillus*. *Male genitalia:* Aedeagus in lateral view (fig. 32) similar to that of *P. batillus* except distal processes more slender with dorsal process exceeding ventral process distally; aedeagal apex in anterioventral view (fig. 33) with apical processes shorter than preapical processes, at times with extra process basad of preapical process; plates and styles in ventral view (fig. 34) with basal portions of plates curved to form distinct open oval area between them, plates distally narrowed and attenuated, shank of style wrinkled and extended beyond apex of plate, apical hook of style sharply turned mesad (fig. 35).

Types: Holotype ♂, Monson Valley, Tingo Maria, Peru, 29 November 1954, E. I. Schlinger and E. S. Ross in collection of California Academy of Sciences. Paratype ♂♂, 4 with same data.

Notes: *Phercurhinus sosanion* is closest to *P. batillus* and can be separated from that species only by the features mentioned in the key.

Phercurhinus batillus Jacobi

fig. 36-40

Phercurhinus batillus Jacobi 1905:168.

Length of male: 9.5-10.5 mm. *Structure:* Crown well produced with median length and greatest width subequal; coronal surface rugulose, rugulae most distinct and longitudinal on portion between ocelli and base; pronotum like that of *C. cochlear* except posterior portion more clearly rugulose-punctate; scutellum like that of *C. ballista*; face and thoracic venter with hairlike setal covering like that of *C. cochlear*; forewing with punctures between veins in basal $\frac{1}{4}$. *Coloration:* Ground color of crown, pronotum, and scutellum ochreous to reddish brown; coronal apex, frontal sutures, and carina at middle usually darker; pronotum with irregular fuscus to black dots and dashes on anterior $\frac{1}{2}$, lateral margins and punctures in distal portion darkened; scutellum with anterior angles darkened, posterior angle sometimes paler; forewing hyaline except for infuscated basal $\frac{1}{4}$, base of clavus with some additional grayish-yellow pigmentation, veins ochreous to fuscus, costal vein darkest; face and thoracic venter with ground color stramineous; clypeus except laterally, antennal ledges, upper portion of genae, and lora blackened or infuscated; at times clypellus and inner edges of genae similarly darkened; portion of pronotum below lateral carina darkened, rest of sclerites on venter variably darkened; legs yellow to pale brown, femora either ringed with

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33, apex of aedeagus in anterior ventral view. 34, valve, plates, and style in ventral view. 35, apex of style in ventral view. Fig. 36-40. *Phercurhinus batillus*. 36, apex of style in ventral view. 37, valve, plates, and styles in ventral view. 38, aedeagus in ventral view. 39, aedeagus in lateral view. 40, apex of aedeagus in ventral view.

brown or not, tibial and tarsal segments darkest distally. *Male genitalia*: Aedeagus in lateral view (fig. 39) elongate with 2 pairs of processes at or near apex and 1 pair distinctly preapical; aedeagus in ventral view (fig. 38) moderately broad with rod forked near base, 1 pair of apical processes and 2 pairs of preapical processes; plates and styles in ventral view (fig. 37) with basal portions of plates oval and distal portions attenuated and narrow, styles with shanks long and wrinkled, apical hook broadly turned mesad (fig. 36).

Type: A ♂ lectotype is here selected with the labels "Peru N Rioja, Garlepp c." (light green label) and "Coll. A. Jacobi, 1913-9" (dark green label—this label added later) and "A. Jacobi, Typus" (pink label with black frame) and "Staatl. Museum für Tierkunde, Dresden". The lectotype is in the entomological collections of the Museum für Tierkunde, Dresden, D. D. R. A second ♂ with same labels from Dresden was also studied.

Notes: In addition to the features noted in the key, this species has narrow pigmented areas at the bases of the forewings. In *P. batillus* the basal $\frac{1}{4}$ is not entirely pigmented, whereas its congeners, except *P. sosanion*, have at least most of the basal $\frac{1}{4}$ pigmented. A specimen from Rurrenabaque, Beni, Bolivia agrees with the lectotype except for the apical aedeagal processes, which are somewhat differently bent and have an extra process on one side (fig. 40).

Dayoungia Kramer, new genus

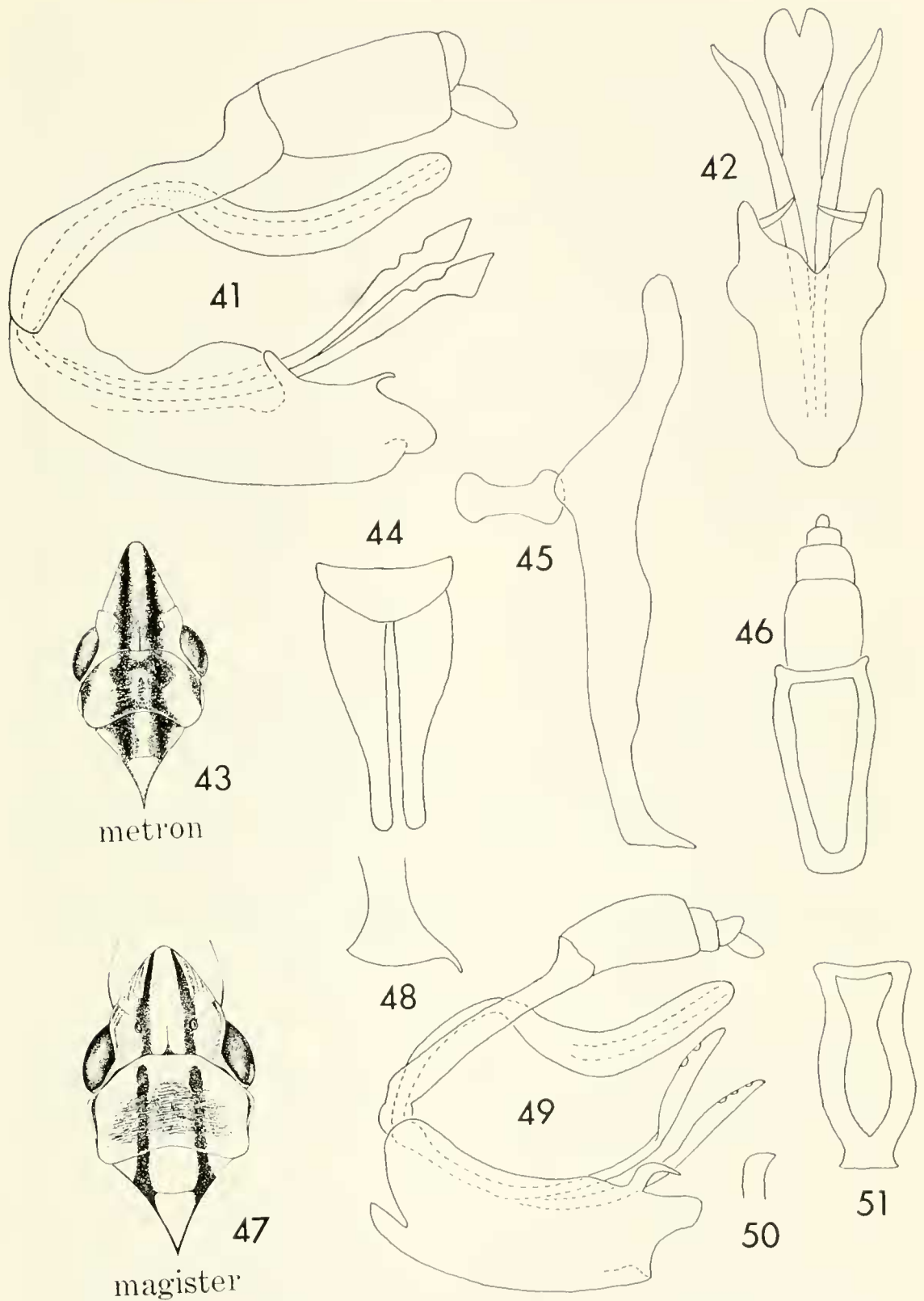
Type-species: *Dayoungia magister* Kramer, new species.

Moderately large (9–10.5 mm) somewhat flattened leafhoppers; head triangularly produced apically; coronal suture normal; midline beyond coronal suture often depressed or shallowly excavated; coronal margins carinate near eyes and at apex; portions of margins near eyes somewhat elevated and flared; antennal ledges carinate but not strongly protruding; face without vestiture; pronotum at least partly transversely rugulose; forewing with appendix narrow, with 4 apical and 3 closed preapical cells, veins usually well delineated; legs normal, with spinelike setae on hind tibiae both of the normal and shortened types. *Male genitalia*: Pygofer without appendages or processes; valve narrow; plates elongate and bluntly subtriangular; styles elongate and broadened distally; connective barlike and transverse; aedeagus well sclerotized with long paired basal processes and massive sheath; sheath dorsally connected to pygofer and base of anal tube by sclerotized apodeme; gonopore apical. *Female genitalia*: Female unknown.

This genus is named for Professor D. A. Young in recognition of his outstanding contributions to the classification of the Cicadellidae.

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Fig. 41–45. *Dayoungia metron*. 41, aedeagus, sclerotized apodeme, and anal tube in lateral view. 42, aedeagus in ventral view. 43, head and thorax in dorsal view. 44, valve and plates in ventral view. 45, connective and style in dorsal view.



view. Fig. 46-49. *Dayoungia magister*. 46, sclerotized apodeme and anal tube in posterior view. 47, head and thorax in dorsal view. 48, apex of style in dorsal view. 49, aedeagus, sclerotized apodeme, and anal tube in lateral view. Fig. 50-51. *Dayoungia virescens*. 50, avicephaliform process in lateral view. 51, sclerotized apodeme in posterior view.

KEY TO SPECIES OF *DAYOUNGIA* KRAMER

1. Forewings hyaline with broad fuscus band across middle and fuscus patch at each base *metron*, new species
 — Forewings largely opaque with only portions beyond claval apex hyaline 2
2. Forewings largely dark red or reddish fuscus; crown with median length and greatest width subequal *magister*, new species
 — Forewings largely green or fuscus washed with green; crown with median length exceeding greatest width *virescens*, new species

Dayoungia metron Kramer, new species

fig. 41-45

Length of male: 9-9.5 mm. *Structure:* Like that of *D. magister* except less robust; crown narrowly and triangularly produced with median length clearly exceeding greatest width (fig. 43). *Coloration:* Like that of *D. magister* except: area between black dorsal stripes, especially on crown, partly or entirely blackened; forewing hyaline with small fuscus patch at base and larger one at middle; upper submargin of clypeus with solid or broken transverse black band, band follows contour of head. *Male genitalia:* Aedeagal complex in lateral view (fig. 41): sheath broadly oval, rounded basally, bluntly produced at middle distally; dorsal margin irregularly undulate, slender and simple process on dorsal margin near apex; aedeagal processes slender and subtriangular apically, their dorsal submargins broadly undulate; rest of complex like that of *D. magister*; aedeagal complex in posterior ventral view as in fig. 42; connective and style in dorsal view (fig. 45), connective rounded on each side, apex of style tapering to outwardly directed sharp tip; valve and plates in ventral view as in fig. 44.

Types: Holotype ♂ (USNM 73371), Chapada, [Brazil], March, Collection C. F. Baker. Paratype ♂♂, 1 same as type except "November"; 1 same as type but without month.

Notes: *Dayoungia metron* is easily separated from its congeners by the distinctive coloration of the forewings. In general body form, it is less robust than other members of the genus.

Dayoungia magister Kramer, new species

fig. 46-49

Length of male: 10-10.5 mm. *Structure:* Crown broadly and triangularly produced with median length and greatest width subequal (fig. 47); apical carina of crown extending basad on each side to point short of frontal sutures; laterad of carina on each side some clypeal arcs clearly visible as part of dorsal surface; midline beyond coronal suture usually slightly depressed; portion of crown between ocellus and eye at times similarly depressed; surface of crown weakly rugulose and somewhat granular; pronotum declivent laterally; anterior portion of pronotum with vague, irregular, shallow depressions and surface similar to crown; posterior portion of pronotum transversely rugulose; scutellum with anterior angles finely scaly, rest granular. *Coloration:* Ground color of crown, pronotum, and scutellum yellow to ochreous; with pair of black, irregular and at times broken longitudinal stripes, 1 stripe of pair on each side of midline and transversing crown, pronotum, and scutellum; pronotum with lateral submargins

blackened; forewing dark red or reddish fuscus except for hyaline portion beyond claval apex; face yellowish with clypellus, basal $\frac{1}{2}$ of clypeus, and often lora, basal portion of genae, and antennal bases blackened; thoracic sclerites with same ground color, and variably blackened; legs ochreous with or without variable darkened areas. *Male genitalia*: Aedeagal complex in lateral view (fig. 49): sheath subquadrate, ventral margin at base narrowly produced, dorsal margin at apex quadrately produced, avicephaliform process on dorsal margin near apex; aedeagus simple, tubelike, and basally attenuated; aedeagal processes slender and expanded distally, their dorsal margins irregular; sclerotized apodeme joined distally to base of anal tube; apodeme in posterior view (fig. 46) subquadrate and narrowest at base; apex of style in broad ventral view (fig. 48) with outer edge produced as slender, bent extension; rest of structures like those of *D. metron*.

Types: Holotype ♂, Puerto Bember, Misiones, Argentina, March 1945, Golbach, Willink, Hayward in collection of the Miguel Lillo Foundation, Tucuman, Argentina. Paratypes, 15 ♂♂, Independencia, Paraguay, 10 October 1951, from Bavarian State Zoological Collections, Munich, Federal Republic of Germany.

Notes: The features noted in the key readily distinguish this species.

Dayoungia virescens Kramer, new species
fig. 50-51

Length of male: 9.5 mm. *Structure*: Like that of *D. magister* except crown broadly and triangularly produced with median length clearly exceeding greatest width. *Coloration*: Like that of *D. magister* except: ground color of crown, pronotum, and scutellum brighter yellow to greenish yellow; forewing green or fuscus washed with green, except for hyaline portion beyond claval apex. *Male genitalia*: Like that of *D. magister* except: avicephaliform process of sheath (fig. 50) stouter and blunter; apodeme in posterior view (fig. 51) indented at base and near apex.

Type: Holotype ♂ (USNM 73372), Rio de Janeiro, Corcovado, D. F., Brazil, November 1958, Seabra and Alvarenga.

Notes: *Dayoungia virescens* is exceedingly close to *D. magister* and may prove to be no more than a subspecies of it. However, it is easily separated from *D. magister* by both color and head shape.

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